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The Covered Bridge in Oregon: A Continuing Tradition

RANDALL V. MILLS

THE COVERED BRIDGE is associated with the picturesque and the past as a survival of leisurely craftsmanship by master builders who had a feeling for beauty. Yet the bridges were only accidentally picturesque and were in fact practical solutions to problems of engineering and economics. For nearly a century they were standard construction, and their practicality is proved by their longevity. Still in use in the United States are about two thousand covered bridges, and probably as many more are in Canada.[1]

A covered bridge is simply a housed wooden-truss span; that is, the bridge structure is composed of strong timbers framed to form a truss able to carry heavy weights, with stresses so distributed that supports are needed only at the abutments. To protect the wooden structure from decay caused by dampness and weathering, the trusses are boarded over on the outside and the bridge is roofed over its entire length and width. The housing is superficial and has the same function as do coats of paint on an unhoused truss. That either the housing or the paint improves the appearance or enhances the picturesqueness of the bridge is, to the builder, of no great importance.

As the nation grew, fords and ferries, inadequate to carry growing traffic, were replaced by bridges. When the length of the bridge increased beyond that of available single timbers, and when the weight became greater than unbraced stringers could carry, mutually braced structures or trusses were used. Until the introduction of iron, wood remained the only inexpensive material for bridges, and masonry structures were used only in relatively wealthy districts. Later, as iron became cheap and its fabrication simple, iron bridges usually displaced the wooden on main arteries where the costs of erecting them could be met. On minor roads and byways, wood remained the standard construction material until the end of the nineteenth century; and in some sections of the country where traffic was light and timber available and cheap, the construction of covered bridges continued well into the twentieth century.

In Oregon, many of the conditions that led to the building of covered bridges were early encountered and still remain, and the construction of such bridges continues.[2] Covered-bridge builders developed their own traditions, mainly because they were primarily joiners and carpenters and not trained engineers. Their first concern was to build an adequate bridge at a designated site, and they altered the tradition to fit their materials, their own day, and the conditions of the place. In Oregon, though standard plans are used, changed to fit the requirements of the site, and considerable mechanization has come into the construction, the tradition continues, and the building of the bridges follows an unbroken continuity. Still in use are about three hundred covered bridges; and in some counties half the bridges now being built are covered.

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[1] *Covered Bridge Topics,* IV (March, 1946), pp. 3–4.

Lane County may be taken as an example. Along the eastern edge rise the peaks of the Cascade Range, and between the main valley and the sea are the lower summits of the Coast Range. But mostly it is a land of rolling hills and flat valleys threaded by many streams that flow down to form the headwaters of the Willamette River. The hills are heavily forested, and the major industry is logging, always peripatetic in its operations. Settlement in the county, beyond the main valley, is sparse but increasing. Road building in the county must be adapted to the problems brought by the shifting industry and the growing population; a road within two or three years after its opening may be called upon to carry traffic far heavier than had been foreseen, or it may carry less as the logging operations move away. On such roads, expensive permanent structures are uneconomic. In Lane County, though the undeveloped resources are great, the tax income is not large enough to permit any lavish expenditure for roads. An Oregon county court, for that matter, in its handling of tax funds is about as cautious as a traditional New England town meeting. County-road builders must consider all the factors: the amount of money available, the unpredictable direction of population growth, shifting industrial traffic, the moist climate, and the many streams that must be crossed. In Lane County the Willamette River forks, and traffic routes must cut across many branches.

What is needed on county roads that may potentially become main arteries of travel is an inexpensive type of bridge that will give a fairly long period of service but can be replaced, should traffic increase, without too great expense or waste. On some highways in the state elaborate and often strikingly beautiful structures of steel and concrete have been built, but the traffic they are called upon to carry has increased beyond predicted density, and the narrow bridges have become traffic hazards. Such bridges as the one across the Willamette at Springfield or the well-designed one across the Santiam at Jefferson[3] illustrate the unpredictability of traffic flow in a growing state. On secondary roads, where utility and economy are major factors, the obvious type for use in a forested region where timber is easily available is a wooden bridge, either trestle or truss. Timber can be cut near the site and erecting costs kept low, the whole job from the felling of the logs to the painting of the roof being done by regular county bridge crews. But nothing is more harmful to a wooden bridge than dampness, which hastens decay in timber, and the climate of western Oregon is not notable for its aridity. A timber span in the region has, as a result, a short normal service expectancy, and even under careful maintenance and regular painting will require replacement in a few years. If the timber span is housed, however, to keep the trusses dry, the service expectancy is lengthened enough to permit the bridge to last, under ordinary traffic, for an economic period: until it has paid for itself through use or until the traffic has grown dense enough to warrant construction of a larger bridge.

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[2] A few other states have built new covered bridges since 1930, but such construction is occasional. For California, see S. Griswold Morley, *The Covered Bridges of California* (Berkeley, 1938), pp. 34–35; for other states, see files of *Covered Bridge Topics.*

[3] The fine concrete arch bridge across the Santiam River proved to be inadequate for traffic within a decade after its building; it was in 1947 replaced by a new span downstream, and the new bridge is to be duplicated when the road is widened to four lanes. See Portland *Oregonian,* September 7, 1947.

Covering a bridge adds something to the initial cost, but the increased length of service offsets the expense. A housed timber-truss span has, according to studies made in Oregon, a service expectancy of 150 per cent greater than that of an unhoused span, and, if given proper maintenance, its length of service will be governed not by its type of construction but by its use. On the basis of costs, the economic life of a housed span is set between twenty-five and thirty-five years, and if the covering is regularly painted (say every five to eight years), and if after its first year of service it is given a careful tuning up—its staybolts tightened, its camber adjusted, its whole structure inspected—the bridge will last as long as it is needed.[4] The resistance to decay afforded by the cover was long known among bridge engineers and the practicality of the cover was recognized so well that, for reasons of economy, engineers adopted the covered bridge as almost standard. On July 5, 1909, a passenger train—a locomotive and one coach—on the Oregon and Southeastern Railroad rumbled onto the uncovered single-span wooden Howe-truss bridge over the Row River. Without warning the bridge buckled, dropping the train into the river and injuring twenty people. An investigation of the collapsed structure, called the Currin bridge, showed that, though it had been recently inspected and had shown no signs of weakness, it was in fact badly decayed near the truss rods so that the timbers crumpled at several points. The Railroad Commission in its report added significantly, "This was an uncovered bridge and had been built less than seven years. If it had been covered it would have lasted twenty years."[5]

Normally in Oregon a covered bridge after twenty or thirty years is replaced by a structure better adapted to handle increasing loads. As a result of the replacement policy, required by shifting traffic, the longest service of any covered bridge now standing probably does not exceed sixty years. At Saginaw, crossing the Coast Fork of the Willamette River, was a single-span bridge, built in 1884. During its period of use, it carried light farm traffic, but after half a century the traffic shifted to logging, and the increased weight of loaded trucks gradually battered the old bridge, weakening it and increasing its maintenance costs. Finally, an overloaded truck crossed in defiance of posted load restrictions, and the trusses received strains beyond their limits. Not long afterward, a flood swept down the river and weakened the abutments so badly that the bridge, then sixty years old, had to be removed. Downstream a hundred yards a new covered bridge replaced it: a bridge that was longer, wider, and stronger than the old one. The new bridge was designed to carry logging traffic and would continue to serve indefinitely after the logging traffic ceased. By replacing the old bridge by a new one, the county avoided the costs of a steel or concrete bridge which might in time be larger than the traffic warranted or which might, if traffic increased, be too expensive to replace.

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[4] C. B. McCullough, *Economics of Highway Bridge Types* (Chicago, 1929), p. 159.

[5] Oregon Railroad Commission, *Report . . . for 1909* (Salem, 1910), p. 21.

That the covered bridge is strong is easily shown. During a period of modernization that swept Oregon in the late 1920's, many of the old covered bridges were arbitrarily ruled to be unsafe and were replaced by spindly steel-truss spans that were, it was believed, stronger. In 1929, under the direction of E. H. McAlister at the University of Oregon, a series of tests were made on the timbers taken from the dismantled covered bridges. One had been at Spores Ferry and another at Hayden, both crossing the McKenzie River and both built in 1874. Their trusses and main stringers had never been treated by a preservative but had been under cover since the bridge was constructed, half a century before. Moreover,

> considering the great abundance of first-class timber in those early days, it was anticipated that the timbers... would be found of uniform high quality, but this was not the case. Some were first class, some were mediocre, and some were poor. At least three of the 12 specimens would have been rejected by modern grading rules from the class of bridge timbers—either because of bad knots in critical positions, or because of very low density (too little summer wood) or for cross-grain.[6]

Evidently, "mill-run" timbers had been used without grading. Yet under tests the timbers showed that after half a century of protected seasoning they were strong enough to carry any traffic they might be called upon to handle, and were, in fact, a little stronger than the iron span which replaced them. Since the tests were made, Lane County has stopped dismantling covered bridges, except when traffic conditions actually require a change; and the building of covered bridges has been revived. At present, seventy-two are in use on county roads, though the count fluctuates from year to year as bridges are replaced, dismantled, moved, or new ones are built.[7]

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[6] E. H. McAlister, *Strength Tests of Old Douglas Fir Timbers* (Eugene, Oregon, 1930), University of Oregon Publication, Mathematics Series I, No. 2.

What can be done to bridges is seen along the Row River. There a shaky iron-truss span (which recently had to be restricted to light traffic until major repairs could be made upon it) carries the main road from Cottage Grove to upper valley points. Radiating roads cross the river on covered spans. At Dorena a new flood-control dam is being built, and behind the dam a reservoir will flood the narrow valley for several miles. In the area to be inundated are three covered bridges, all of which must be removed. One, a quarter of a century old, will be scrapped because it is small and not worth salvage; another, built ten years ago, will be dismantled and its parts stored for eventual reassembly at another site; and a third, also recently built, will be removed to a new site upstream and put back into use, serving a newly opened road.

The construction of covered bridges in Lane County is methodical and largely mechanized. From plans prepared by the State Highway Department for its own construction, the county does its building.[8] The basic structure is a timber Howe truss with steel tie-rods, and the length of the truss is varied to suit particular requirements of the sites. The county commonly uses standard plans for fixed lengths—sixty, ninety, and one hundred twenty feet—and alters them slightly for special conditions. When possible, the timbers for the bridges are cut from the forests close to the site and are shaped by the bridge crews, but when laminated or spliced timbers must be used, they are cut and fitted in the county shops at Eugene and taken to the site by county trucks. For very long spans, especially in places where no suitable logs are handy, spliced timbers are used, but spliced and laminated sticks are thought to be less strong than the single stick. When the Pengra bridge across the Middle Fork of the Willamette was built, into its single truss went four unspliced stringers, cut near by, each sixteen inches square and one hundred thirty-four feet long, probably the longest unspliced timbers ever used in bridge building. Those in the Mapleton bridge over the Siuslaw River approach them in length, however, for in each of its two spans are unspliced sticks fourteen inches square and one hundred twenty feet long.

The Mapleton bridge is notable not only for its long stringers but for other features. Among all county bridges it is one of the most picturesque—crossing the river at the head of tidewater and swinging between green hills. At one approach, a timbered slope rises sharply from the river; at the other is the town on a narrow shelf, fronting a river lined by piling and small wharves for fishing boats. The bridge itself, except that it has two spans, is like others in the county, painted a glaring white with a dark roof. However, at the town approach are two abutments, fairly close together, spanned by a simple open wood-deck truss that connects the trestle approach and the covered part. The short deck span is a technical compliance with the law: above the bridge the river is, for a few hundred yards, "navigable," and the bridge, lacking required clearance, had to have a drawspan in order that shipping might not be impeded. So the deck span is free of connection with approach and truss; it is a drawspan, except that there has been no occasion to open it (there is no shipping) and no one has figured out how to open it. But it complies with the law, and everyone is happy. The Mapleton bridge is a good example of economy, too; erected in 1934, it received its careful tuning a year later and then had no major maintenance until early in 1947 when some piling had to be replaced and a few timbers in the cover changed to check minor decay. The climate is very damp where the bridge spans the Siuslaw River at the head of navigation, only a few miles from the sea.

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[7] Eugene, Oregon, *Register-Guard,* July 28, 1947. Much of the information in this paper was furnished by P. M. Morse, Lane County Surveyor; Mr. Fogle and others of his staff; and Mr. Arthur Striker, County Bridge Superintendent.

[8] These plans are reproduced in McCullough, *op. cit.,* p. 79.

Lane County has so many covered bridges that no special designation is given them, and the records themselves make no distinction except to indicate incidentally that the trusses are housed. Some bridges are named, either for the locality or for some local place, but the names are traditional rather than official, and on the records all bridges, regardless of type, are indicated by code numbers which are simply keys to their location. Thus, the Ferry Street bridge in Eugene, built in the late 1870's as a two-span covered wood truss and replaced in 1912 by a single steel Warren arch truss, is designated "17-3W-29C" to indicate, in order, the township, range, and section of its site. The final letter shows that it is the third bridge within the section. By means of the system, the county surveyor[9] can quickly locate any bridge by checking the number against the master map of the county. In a region with many streams and bridges, the convenience of the system is readily apparent. The system of identification used by the State Highway Department, on the contrary, is arbitrary and requires use of a code book for locating bridges.

In spite of uniformity of design, the covered bridges of Oregon have variety, a variety gained from their settings and from local methods of covering. Linn County bridges often are given siding only at eaves and floor, and the trusses are left open but are painted white. Sometimes the siding is extended so that the opening is long and narrow, as if a row of windows were left along the length of the truss. On all roads, wherever the highway approach makes a sharp curve, the bridges have low windows, cut in the siding to afford motorists a view of the road ahead, and the windows are protected by wide eaves, cornices, or wooden awnings. Bridges in Benton County have wide, flaring side-covering that gives them a heavy, solid, sometimes squat appearance, made more noticeable by the barn-red paint used on them instead of the white paint standard throughout the rest of the state. Along the coast, in Lincoln County, the bridges are low and wide, braced, it seems, against the coastal gales, for some of them cross streams within a stone's throw of the mouth on the beach.

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[9] Lane County, it might be noted, retains the older title of county surveyor for the position often called county engineer. The use of the title in Lane County reflects the homesteading period in county history.

Lane County bridges are distinguished by their vertical board-and-batten sides, their shingled roofs, and their portals with capitals and parabolic arches—designs taken from the standard State Highway Department plans. Yet the county gives them individuality. To save the costs of reshingling, the county has recently made use of sheet aluminum to roof the new covered bridge at Dexter. Aluminum roofing, and perhaps eventually siding as well, may become standard—and will introduce a curiously surprising touch to the landscape.[10] Long bridges, both State Highway and Lane County, allow ventilation and light by a narrow opening between the wide eaves and the top of the siding and by a series of windows with angular tops, pierced in the sides and themselves protected by louvres of slanted boards.

Though the bridges are generally severe and uniform in design, real individuality comes in the design of the portals, a part the local builders can alter to fit their own tastes. In Benton County, the portals are massive, with round arches and flared sides. Linn County adds to the airy lightness of its design a mechanically cut arc for the portal, although some smaller bridges are without ornament and have angular or square entrances, with the corners sometimes cut to repeat the lines of the eaves. Some counties use simple, square portals; some follow the State Highway plan and place small capitals at the footings of the arch. The State Highway Department itself has a rather elaborate decorative strip around the arch, with the pattern worked out by wooden strips.

In Lane County, the shape of the portal tells something of the age of the bridge. Some structures, usually on back roads and probably well into their third or fourth decade of service, have no ornamental portal but merely a square entry with the corners angled. Bridges built before 1920 show a high portal with a deep-cut arch, as is seen on the old Military Road bridge across Salt Creek near Oakridge. A third type, used on Howe-truss spans built in the 1920's, has a squarish portal, with the corners rounded; and those built from the State Highway plans use small capitals made from boards with a parabolic arch. All Lane County bridges have flash boards extending about six feet inside the portals to protect the trusses from rain that blows into the bridge. One flaw in the design is the flatness of the arch which, though giving clearance for ordinary traffic, is not sufficient for the logging trucks that remain within the height limit only when they must. As a result of the excess height of the log loads, the boarding at the portals of many bridges in the county has been crushed, and many bridges have unkempt, ragged ends.

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[10] *Register-Guard,* March 4, 1947.

A wooden-truss span will carry its rated load for a long time, but like any span, regardless of material, it will give way under constant overload. Sometimes decay will creep from the abutments, but it is usually the bridge floor that yields and permits the whole span to fold neatly together. The Saginaw bridge was weakened by overloads, particularly at its right bank approach where logging trucks had to roar up a sharp grade and curve to enter the span. A short bridge across Mohawk Creek silently collapsed over an overloaded truck and dropped with it into the river, the siding and roof neatly covering the heap of wreckage; and other bridges have collapsed under similar overloads. Occasionally, too, a truss is struck by a log truck or a loose log that swings free from a load, and under the impact, the truss gives way. But such failures cannot be attributed to the structure of the bridge; they are the results of unpredictable traffic conditions.

At one time Oregon was spotted by covered railroad bridges, and even yet a surprising number survive, although there is less reason for covered bridges to be maintained on railways than on highways. Those which remain are on minor roads or branch lines. The Southern Pacific has most of them: two on its Molalla branch, one on the Silverton-Springfield line (the former narrow-gauge Oregonian Railway), another on the Marcola branch, and two others on the Yaquina Bay and the Mill City branches (the old Oregon Pacific Railroad). The short Oregon Pacific & Eastern Railroad, extending from Cottage Grove, has three, and at Cottage Grove the Chambers Logging Railroad has a neat one across the Coast Fork of the Willamette River. Some may remain on the line extending from Myrtle Point to Powers, which has been used mainly as a logging road since the Southern Pacific abandoned it. The Southern Pacific bridges are about thirty-five years old, tall, narrow, with square portals and sharply sloping roofs extended to form wide eaves. Along the ridge of each bridge is a catwalk for maintenance men, at each end of which is a water barrel for use in fighting fires. Dark-red paint, the same as that used for other railroad way structures, covers them. The bridges on the O. P. & E. are simple and unpainted.

Another bridge not maintained by public authorities is at Westfir, crossing from the town to the mill and spanning the North Fork of the Middle Fork of the Willamette. Just below the bridge the river is dammed to supply power and form a millpond, and the bridge barely clears the surface of the water. It is a very wide structure, painted a gray-green, and locally known as the "Office bridge." In design it is individual, having horizontal rather than vertical siding and having skirting carried below the truss and trimmed to suggest a flat arch. Along one side of the bridge the decking is extended, and a roof, like a long balcony, is built above it to provide a footpath outside the main truss. A similar covered walk is on the Bryant Park bridge at Albany. The Office bridge, low and without approaches, opens directly onto the main street of the little lumber town (as does the bridge at Chitwood, over the Yaquina River in Benton County) and is reminiscent of New England bridges. It is owned and maintained by the Hines Lumber Company and is the third built on the site in the past decade, its two predecessors having been destroyed by floods.

Oregon bridges are not old, although occasionally when one is dismantled a local newspaper reports that an "old landmark" has disappeared. Near Canby a long span, known as Knight's bridge, built in 1876, lingered until 1940, when a newer bridge supplanted it. Then it was set aside and preserved as the oldest remaining in the state; but early in 1947 a gale caught it broadside and destroyed it, its aging trusses not having been sufficiently buttressed against a side thrust.[11]

When the first covered bridges were built in Oregon is uncertain, but probably at least a few were erected in the 1860's, and some might have been built in the late 1850's. The wave of bridge building came in the 1870's, several conditions combining to cause it. First was the rather rapid development of the Willamette Valley with the increase in wheat growing, and second was the need of roads connecting the farming districts with river landings.

At the time, too, encouragement came through the organization of the aggressive A. S. Miller & Sons Company of bridge builders, organized in 1874.[12] Albert Miller, founder of the company, was born in Massachusetts and learned bridge building from independent craftsmen and engineers. As a young man he worked on bridges throughout New England and then moved to Ohio, settling in Darke County. There he continued building bridges at the time when hundreds were being scattered through the Ohio Valley. While Miller was at work, engineers, amateur and professional, were creating new and sometimes awe-inspiring truss designs, following the lead of Burr. The Town lattice truss was popular, as was the simpler Howe, and practically every bridge builder tinkered to see whether he could produce a variation of them that he could use efficiently.

Such a tinkerer was Robert W. Smith of Tippecanoe, Ohio, who in 1867 patented an "improvement in bridges" which he called the "Smith Patent Truss." This structure vaguely resembled the familiar Warren truss but differed from it in several ways: the sill was laminated, composed of three pieces, the braces alternating on each side of the center piece of the sill; the braces themselves were framed so that no cast-iron foot-pieces were needed; main braces sprang from within the main sill, and cross braces were fitted into the main; and no tie rods were used. The virtues of the truss were variously described, but essentially the convenience lay in the elimination of all metal work except for a few bolts used to hold the sills and braces together. Smith, his patent granted, promptly began peddling the rights to the use of his truss to other builders, one of them being Albert Miller, who secured the rights for the Pacific Coast. Provided with his license from Smith, Miller moved west, probably by overland railroad, to California, where he went to work at bridge building, and where he may have used the Smith truss.

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[11] Portland *Oregonian*, February 5, 1947.

[12] *Ibid.*, March 27, 1947. I am indebted to Mr. Kenneth C. Miller, grandson of A. S. Miller, who kindly supplied me with much information relating to the history of the company, and the biographies of his father, grandfather, and uncle. Some additional information is in Joseph Gaston, *Centennial History of Oregon*, II, 308.

Then in 1874, Miller moved to Oregon, established the A. S. Miller & Sons Company and began to build bridges. Up and down the Willamette Valley the company worked, putting up fine, sturdy Smith-truss bridges, some of them notable, and all of them long lasting. The Knight's bridge near Canby was one of them; the Ferry Street bridge at Eugene was another, and the Spores Ferry and Hayden bridges were still others. In the work Miller was joined by his sons: Henry, born in 1854, and Frank, born in 1857, both educated for engineering and business. Henry worked with his father for a short time and then returned to California for a year, during which he worked on bridges at Lodi, Visalia, and Alameda. On his return to Oregon he was put in charge of the Lebanon bridge over the Santiam and was injured when the span fell while being erected. Later, Henry built the Jefferson, the McMinnville, and the Ferry Street bridges, in each instance acting as superintendent for his father.

At the time, neither the state nor lesser governing units had funds available to pay for major projects, and when an "improvement" (a favorite term of the day) was required, the persons interested solicited throughout the region, asking pledges of cash or salable farm produce in order to secure the needed money. In the early 1850's both Portland and Salem met costs of improving the river channels by funds raised through subscription, and both Eugene and Albany assured the routing of the Oregon & California Railroad through their limits by offering pledged bonuses, raised by the subscription method. At Eugene, also, the land and first building for the University of Oregon were secured and with difficulty paid for by donations; and the collecting of subscriptions led to a series of adventures that have gone into the folklore of the institution. Many bridges were built by subscribed funds, the A. S. Miller & Sons Company sometimes doing the soliciting itself. The Ferry Street bridge at Eugene, in 1876, was financed by funds obtained through solicitation. It cost $10,200—a sum rather easily raised and not much less than the $16,000 raised painfully the year before in Eugene for the University. But soliciting for a bridge met less opposition among the citizens, for, after all, a bridge is something tangible and useful.

The Miller company made use of the Smith-truss patent regularly and was constantly bothered by imitators who built similar trusses without worry over licensing or patent infringement. On their rides about the state, the several Millers constantly came upon bridges that were Smith trusses but had not been built by their company, and bridges built from pirated designs were of no profit to the Millers.

In the 1880's the company continued under the direction of Frank Miller, his father and brother by then having dropped out. Frank Miller himself then became the bridge builder for the Oregon & California Railroad in its extension south from Roseburg, and some of his timber bridges stood until they were removed in the modernization program carried out by Edward Harriman during his period of control of the Southern Pacific. Miller, at the same time, may have developed the peculiar type of bridge used on the Oregon Pacific Railroad. It was an ordinary wooden truss, unroofed, but with the trusses themselves entirely encased. The omission of a roof largely eliminated the danger of fire started by sparks from wood-burning locomotives.

In the employ of Frank Miller during the 1890's was a man who began first as a laborer and then rose to be construction boss. Like Frank Miller, he was from Ohio, where he had been born in 1853. His name was Lord Nelson Roney. As a small child, Roney had been taken from Ohio to Missouri by his parents, and in Missouri he was apprenticed to a master carpenter and bridge builder, from whom the lad learned the art of wood framing. Roney traveled west, arrived in Oregon in 1876, and soon joined the Miller company, in which he rose to superintendency of the construction of two covered bridges. When Frank Miller went with the Oregon & California Railroad, Roney went along and in time came to be the company's bridge superintendent. Later, he established himself as an independent general builder. Then, his old skill in bridge building reasserting itself, he soon was directing the construction of all bridges in Lane County, and eventually was named bridge superintendent, a position he held until 1918. Roney lost track of the number of bridges he built, but they must have totaled in the hundreds, for long after his retirement he continued to act as adviser and sometimes as superintendent of construction for the county. He remained active as a builder until his death in 1944.[13]

Roney's successor as county bridge superintendent is Arthur Striker, who learned from Roney the art of timber construction. Roney had been a practical joiner; Striker brought to the job a training in engineering, just as Albert

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[13] The best account of Roney's activity is in the Eugene *Register-Guard,* September 2, 1943, upon the occasion of his ninetieth birthday.

Miller brought academic training to supplement the practical experience of his father. Hence, the tradition of bridge building in Lane County is curiously direct and unbroken from the bridge builders of New England, each generation adding to the skilled know-how of the former the latest knowledge in science and engineering. Lane County bridges are still being built in the great tradition, which remains alive, not as a survival or a revival but as a living and vigorous art.

Because Oregon repeats many of the conditions that directed the construction of the covered bridge during its great periods in the Middle West and New England, Oregon seems also to repeat the folk attitudes toward the bridges. Where covered bridges are old and gradually disappearing, legend and affection, and heightened antiquarian interest collect around them. And so develops an urge to preserve the oldest bridge for its nostalgic reminders of a glorious past and for its picturesque qualities—only recently noticed. The bridges are a surviving but weakening link to an earlier period. The center of interest in covered bridges is New England;[14] but in the Midwest, interest in them is growing, although there, where the bridges are newer and more numerous, the interest is maintained by a kind of cult among antiquarians.[15] So it is also in California, where there never were many covered bridges and where anything that harks back to California's early days is periodically rediscovered.[16] As time passes, relics become first something that ought to be replaced by the new and modern; then, those that have not been replaced suddenly develop an intrinsic worth because of their very age, and they require careful preservation. A historical monument is usually something that was unimportant enough to avoid replacement at a time in its past.

So it is in Oregon. Ask an ordinary Oregonian about covered bridges, and he becomes mildly embarrassed. Yes, he admits, there are many of them left in the state, but fortunately they are being replaced by something more modern. They are old-fashioned, he feels, something not worthy to be retained in an up-and-coming country. Usually he has not especially noticed them—to him they are only another kind of bridge and possess the structural and architectural merit of a corrugated iron culvert, and it is often difficult for him to remember the exact location of a particular covered bridge. However, a gradually developing interest in covered bridges is becoming apparent, particularly as their picturesque values are realized and as their comparative rarity in other sections of the Far West makes them interesting as tourist attractions. And they are undeniably picturesque—their slim white spans over flashing streams between green banks. Certainly the short bridge huddled on the Umpqua River highway with the river on one side and a towering cliff on the other, crossing a swift tributary stream that comes out of a narrow gorge, will attract attention.

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[14] The bibliography of works relating to New England bridges is becoming extensive, but can be found in *Covered Bridge Topics,* passim. See also Clara E. Wagemann, *Covered Bridges of New England* (1931) and Herbert W. Congdon, *The Covered Bridge* (1941).

[15] The quarterly *Covered Bridge Topics* also prepares a supplement treating of only Indiana material. Both Indiana and Ohio within their state historical societies have committees devoted to the history and preservation of the bridges.

[16] See Morley, *Covered Bridges of California.*

Newspaper treatment of the bridges indicates something of the regional attitude. A local correspondent wrote for a newspaper in Eugene that "Lowell once more has a picturesque covered bridge across the Willamette," and went on to note that the structure lacked only "a few aluminum plates on the roof" and was painted a gleaming white. The bridge itself replaced one which had been built by Roney in 1907 and had been "rendered unfit for traffic after a logging truck went crosswise in it and knocked the south pier out of line."[17] When Lane County decided to use aluminum to sheathe the housing, the Eugene paper headed the story, "Old Lane Bridges Go Modern with New Roofs of Aluminum." The term "covered bridge" did not appear in the article, although one reference to "an uncovered wooden bridge" was made.[18] No hint that either the old or the new bridge at Saginaw was covered appeared in the paper during the replacement and construction at that site. Early in 1947, the Portland *Oregonian,* which had a year before published an illustrated descriptive article on the covered bridge, followed its habit of being quick to praise the past and present of Oregon, and published an editorial, "Of Covered Bridges," based on the survey of bridges in *Covered Bridge Topics.* The *Oregonian* began by saying, "Most Oregonians will be astonished, and we hope happily so, to learn that our state ranks second in the republic in the matter of covered bridges"; and ended, "Long may the Canby bridge stand, and the same for others of the genre of our forefathers, here and elsewhere, if for no other reason than that like an old-time song or an old print, a covered bridge brings a happy sort of nostalgia to the reflective, of which sort of people we shall never have too many."[19] That there were not many of that category was doubly indicated by the lack of other references—and by the editor's forgetting that the paper itself not long before had published the story of the collapse of the Canby bridge. In fact, only Homer Davenport mourned in print the passing of the covered bridge, for to him the old Silverton span, taken out a generation ago, with its walls plastered with circus posters and notices of vendues, was a kind of meeting place for the whole town.[20] It is neither the antiquity of the bridges nor their undeniable picturesque quality that has the greatest appeal to the Oregonian. "Covered bridges may be disappearing over the rest of our nation," said the Eugene *Register-Guard,*

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[17] *Register-Guard,* July 14, 1947.

[18] *Ibid.,* March 4, 1947.

[19] *Oregonian,* March 23, 1947.

[20] Homer Davenport, *The Country Boy* (New York, 1910).

"but Lane continues to maintain its supply with an occasional addition."[21] The reason, according to P. M. Morse, County Surveyor, had not a trace of sentiment in it. "Covered bridges," he told the paper, "are not just for the rustic enthusiast, but are money savers for the county." So long as it is practical and economical to build covered bridges, they will be built in Oregon; when that time passes, some may be preserved as mementoes. So tradition follows a well-worn path.

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[21] *Register-Guard,* July 28, 1947.